

# Alaska Fire Science Consortium

A JFSP KNOWLEDGE EXCHANGE CONSORTIUM

<http://akfireconsortium.uaf.edu>

## Spring Newsletter 2011

Volume 1— Issue 1

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### Contact Us

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**New!** Follow us on Twitter @AKfirescience

### *In a Time of Change: The Art of Fire*

**Strengthening collaboration between Artists, Scientists, and Fire Managers to use an alternative form of communication—the visual arts**

The Alaska Fire Science Consortium (AFSC) has partnered with UAF's Bonanza Creek Long Term Ecological Research Station to foster the growing network of visual artists, writers, and scientists dedicated to integrating scientific and artistic perspectives on climate change in interior Alaska. This network, known as *In a Time of Change*, has been working together since 2007 to explore and develop new perspectives on the connections between humans and Alaska's changing ecosystem.



This year's theme will focus on *The Art of Fire*. The goal is to engage professional artists with the members of the fire management community and scientists to promote public understanding and awareness of the science behind management practices in the context of a changing climate. In addition, there is a wealth of creative talent within the fire community that are interested in communicating what they observe and experience on the job.

### What's the Plan?

#### Part 1: Professional Visual Art Exhibit—Bear Art Gallery, August 2012

Nine artists have been selected to develop creative works of art focused on the ecological as well as management aspects of fire. Artists will participate in field trips to observe and interact with fire managers, fire scientists, and other personnel throughout the summer of 2011 in preparation for the art exhibit in August of 2012.

#### Part 2: Community Art Show—Various Vendors in Fairbanks, August 2012

Along with hosting a professional art exhibit, we want to encourage creative individuals, especially from within the fire community, to share their observations and experiences, whether from the field, fireline, or office, in a visual art format.

### How can you Participate?

#### Submit your fire art (paintings, drawings, photos, sculptures, etc.)

Be creative! Submission details coming soon.

**Interested? Get on the fire art mailing list RIGHT AWAY!!**

**Contact: [jennifer.northway@alaska.edu](mailto:jennifer.northway@alaska.edu)**

**Can't Draw?? Don't worry!** Volunteer to be interviewed by an artist, have an artist shadow you for a day, or invite an artist on a field trip.

**More information?** Past Events: [http://www.lter.uaf.edu/outreach/bnz\\_Collaboration.cfm](http://www.lter.uaf.edu/outreach/bnz_Collaboration.cfm)  
The Art of Fire Project Details: <http://akfireconsortium.uaf.edu>

Photo (above) by Clinton Northway.

## Vegetation, Organic Soil, & Permafrost: How are they connected and how will that change?

### Identifying Indicators of State Change and Forecasting Future Vulnerability in Alaskan Boreal Ecosystems

Understanding the connections among vegetation, the organic soil (duff) layer, and permafrost is critical for projecting the impact of climate change on boreal ecosystems that are affected by both human and natural disturbances (wildfire). This **new** 5 year study will combine field data with spatial models to detect and predict state changes in Alaskan boreal forests in response to climate change **AND** fire management practices. A **mapping tool** will be developed, allowing managers to identify lands that are resistant and those that are vulnerable to permafrost loss, along with explore the consequences of interactive changes in climate and land management.



Photos from Ted Schuur

#### Research Team

Dr. Edward (Ted) Schuur  
University of Florida

Dr. Jill Johnstone  
University of Saskatchewan

Dr. Michelle Mack  
University of Florida

Dr. A. David McGuire  
University of Alaska  
Fairbanks

Dr. Scott Rupp  
University of Alaska  
Fairbanks

Dr. Eugenie Euskirchen  
University of Alaska  
Fairbanks

**Part 1 (2011-2013):** Determine links between fire, soils, permafrost & vegetation succession and identify ecosystem indicators of state change.

#### Activities:

Add your sites!!

Collect field data from recent, severe fires

Add monitoring sites to include **RX burns & fuel treatments**

Study vegetation & duff layer history on mid-successional stands

#### Questions to be Answered:

- How does fire severity & fire management affect permafrost degradation?
- Do very deep burns have higher rates of permafrost degradation?
- How does duff layer re-accumulation differ between coniferous & deciduous forests?
- What effects do wildfires and human disturbances (prescribed fire & fuel treatments) have on invasive species?

**Part 2 (2013-2015):** Use models to forecast landscape changes in response to changes in climate, fire regime, and fire management practices.

#### Activities:

Incorporate data into models

Combine and Evaluate models

Project future landscape with a combination of **climate, fire regime & fire management scenarios**

#### Questions to be Answered:

- What boreal ecosystems are most at risk of (a) wildfire or (b) losing permafrost, both as a direct effect of climate change?
- How will fire- or climate-induced changes in forest type influence patterns of fire and permafrost on the landscape?
- Can fire management affect the probability of severe wildfires & ecosystem state change in a future climate?

#### Stay Tuned for More Info

More information on this new project and how you can provide feedback is coming soon. Look for upcoming webinars and other materials in 2011& 2012.

**Want to include your RX burns or fuel treatment sites?** Contact Ted Schuur, [schuur@ufl.edu](mailto:schuur@ufl.edu)





## AICC Predictive Services Toolbox

**On Trial! Daily Fire Weather Briefing Podcast**

**Daily Fire Weather Briefing**

**Fire Weather Briefing Decoder**

**Alaska Critical Fire Weather Patterns**

**AK 7 Day Fire Potential Outlook**

**AK 7 Day Fire Potential Map**

**Alaska Monthly Fire Outlook**

**NEW! Alaska 2011 Seasonal Fire Outlook Podcast**

**Experimental Forecast of Area Burned for Interior Alaska (by ACCAP & AFSC)**

**FWIST - Fire Weather Index Seasonal Tracking Tool**

**(<http://fire.ak.blm.gov/aicc.php>)**

## 2011 Alaska Fire Weather and Outlook Tools

**Are you ready for 2011? What tools are available?**

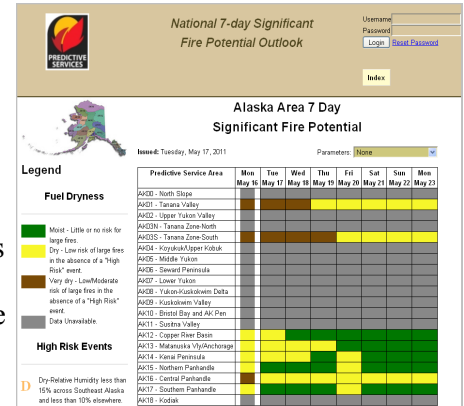
The Alaska Interagency Coordination Center (AICC), Predictive Services Branch creates and disseminates a wide variety of decision support products and services to the fire management community.

### Daily

AICC Predictive Services produces a daily statewide **fire weather briefing** that is posted to the AICC website and delivered as a live presentation. They are also experimenting with publishing the daily briefing as an online **podcast** (audio with slides). Don't remember what to look for or how to read the weather symbols? You can find help documents including a weather briefing **decoder**, weather **basics**, and **critical fire weather patterns** for Alaska.

### 7 Day Outlook

The Alaska **7 Day Significant Fire Potential Outlook** is updated daily, giving a 7 day projection of fuel dryness combined with potential occurrence of "high risk" events (low humidity, high winds, lightning, and high periods of recreation). This outlook is geographically based on the 20 Predictive Service Areas and can also be displayed using the interactive Alaska **7 Day Significant Fire Potential Map**.



### Monthly Outlook

AICC Predictive Services creates a **monthly fire outlook** for the next month along with the following 3 month period. The National Interagency Fire Center (NIFC) uses this information to produce a **national monthly fire outlook**, covering a total of 4 months.

### Seasonal Outlook

The 2011 Alaska Seasonal Fire Outlook identifies areas with above normal fire potential along with general information on climate indices, snow pack and fuel conditions, and other factors that contribute to fire danger. This document is available as a **pdf** and as a **podcast**.

### Other Related Tools and Documents

There are several other fire weather and fuels tools available to help you prepare for the upcoming 2011 fire season. The 2011 **Experimental Forecast of Area Burned** (by Paul Duffy) will provide a monthly prediction of total area burned for interior Alaska. The **Fire Weather Index Seasonal Tracking Tool** (FWIST), developed in 2009, graphically displays fire indices and other key weather factors over the course of the season. Need a refresher on the Canadian Forest Fire Danger Rating System and the components of the Fire Weather Index? The **2008 Weather Guide for Canadian Forest Fire Danger Rating System** is also available on the AICC Predictive Services website.

### Questions??

Contact Fire Weather Program Managers, Sharon Alden ([salden@blm.gov](mailto:salden@blm.gov)) or Heidi Strader ([hstrader@blm.gov](mailto:hstrader@blm.gov))



## Alaska's Top Fire Research Needs Identified and Prioritized

### The Managers' perspective on fire science research gaps in Alaska

Twenty-five fire research topics have been identified as priorities for future fire science research in Alaska. These topics were collected directly from managers and other personnel at the 2010 Interagency Fall Fire Review. The Alaska Wildland Fire Coordinating Group (AWFCG), Fire Research Development and Applications Committee (FRDAC) reviewed and ranked each topic based on 3 criteria: direct management application, data needs, and use to multiple agencies. The top 5 fire research needs were also submitted to the **Joint Fire Science Program** for consideration in their next call for proposals.

#### Top 5 Alaska Research Needs

1. Fire Behavior Models: Validation and Application
2. CFFDRS Fire Weather Indices: Evaluation and Calibration
3. Climate Impacts on Fire Regimes: Past, Present, and Future
4. Fuels Treatments: Short- and Long-term Effectiveness

The complete **2011 AWFCG Fire Research Needs List** also includes descriptions of each topic and specific questions to be addressed. This list can also be found on the AICC website.

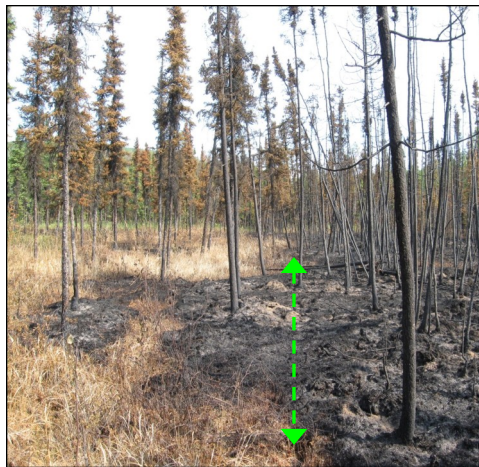
## Noteworthy News and Updates

### Plans for the Nenana Ridge Experimental Burn for 2011?

Collaborators on the Nenana Ridge Experimental Fuels Treatment Research Project are moving forward with plans to conduct a prescribed burn in the remaining project unit this summer. The completion of this project is highly dependent on weather conditions and resource availability. The first unit was successfully burned in June of 2009.

#### More Information:

- 2010 Project Update—**What have we learned so far?**
- Presentations by **Scott Rupp**, **Bret Butler**, **Roger Ottmar**, and **Robert Schmoll**
- **Prescribed Burn Video** produced by USFS Rocky Mountain Research Station, Fire Science Lab (<http://youtu.be/1Qkia5n2g4k>)



Edge of thinned fuel treatment. Photo from Robert Schmoll.

## Alaska Fire Science Consortium

*The purpose of the Alaska Fire Science Consortium is to enhance ongoing fire science delivery by developing new mechanisms for outreach throughout Alaska and to facilitate communication among researchers and managers to bridge the gap in information sharing.*

Visit us at <http://akfireconsortium.uaf.edu>



## Up Coming Events

### SAF National Workshop on Climate and Forests

May 16-18, 2011  
Flagstaff, Arizona

### Forest Inventory and Analysis (FIA) Meeting & Data Workshop

May 25-26, 2011  
Anchorage, Alaska

### LLC Webinar: "Simulating vegetation, fire and climate dynamics in a northern Rocky Mountain landscape"

May 26, 2011

### 7th International Conference on Disturbance Dynamics in Boreal Forest

May 29-June 3, 2011  
Saguenay, Quebec, Canada

### Discover Alaska Lecture Series: Climate Change

June 15, 2011  
Fairbanks, Alaska

### Discover Alaska Lecture Series: The Changing Arctic Landscape

June 22, 2011  
Fairbanks, Alaska

### LLC Webinar: "Emissions, energy returns, and economics of utilizing forest residues for thermal energy compared to disposal by pile burning"

June 28, 2011

### Are we missing something?

Have an event you would like to see highlighted?

Submit an Event [Here](#)

Check out the AFSC [Calendar](#)